

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : MARTIN, et al.

U.S. Serial No.: Not Yet Known, corresponding to
International Application No.
PCT/US03/18716, filed June 13, 2003, which
claims priority of U.S. Serial No.
10/172,346, filed June 13, 2002

Filed : Herewith

For : IN-VIVO ENERGY DEPLETING STRATEGIES FOR
KILLING DRUG-RESISTANT CANCER CELLS

Law Offices of Albert Wai-Kit Chan, LLC
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Whitestone, NY 11357

December 10, 2004

Mail-Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INFORMATION DISCLOSURE STATEMENT

In accordance with their duty of disclosure under 37 C.F.R. §1.56, Applicants would like to direct the Examiner's attention to the following references which are listed below and on Forms PTO/SB/08A and PTO/SB/08B, which are attached hereto as **Exhibit A and Exhibits 1-9**.

1. Herceg Z. & Z.-Q. Wang. Failure of poly(ADP-ribose) polymerase cleavage by caspases leads to induction of necrosis and enhanced apoptosis. Mol. Cell Biol. 19:5124-5133 (1999)
2. Hirsch, T. et al. The apoptosis-necrosis paradox. Apoptogenic proteases activated after mitochondrial permeability transition determine the mode of cell death. Oncogene 15:1573-1581 (1997)

Applicants : MARTIN, et al.
U.S. Serial No.: Not Yet Known
Filed : Herewith
Page 2

3. Geschwind, J.-F. H., et al. Novel therapy for liver cancer: direct intraarterial injection of a potent inhibitor of ATP production. *Canc. Res.* 62:3909-3913 (2002)
4. Green, D.R. & Reed, J.C. Mitochondria & apoptosis. *Science* 281:1309-1312 (1998)
5. Leist, M. et al. Intracellular adenosine triphosphate (ATP) concentration: a switch in the decision between apoptosis and necrosis. *J. Exp. Med.* 185:1481-1486 (1997)
6. Lemaire, et al. Inhibition of caspase activity induces a switch from apoptosis to necrosis. *FEBS Lett.* 425:266-270 (1998)
7. Martin, D.S., et al. ATP depletion + pyrimidine depletion can markedly enhance cancer therapy: fresh insight for a new approach. *Canc. Res.* 60:6776-6783 (2000)
8. Mehmet, H., et al. Relation of impaired energy metabolism to apoptosis and necrosis following transient cerebral hypoxia-ischaemia. *Cell Death Differ.* 5:321-329 (1998)
9. Nicotera, P. & Leist, M. Energy supply and the shape of death in neurons and lymphoid cells. *Cell Death Differ.* 4:435-442 (1997)
10. Nieminen, A.-L., et al. ATP depletion rather than mitochondrial depolarization mediates hepatocyte killing after metabolic inhibition. *J. Am. Phys.* 267:C67-C74 (1994)
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Applicants : MARTIN, et al.
U.S. Serial No.: Not Yet Known
Filed : Herewith
Page 3

6AN precedes tumor regression and is preceded by ATP depletion. Canc. Chemo. Pharm. 40:376-384 (1997)

12. Sane, A.-T. & Bertrand, R. Caspase inhibition in camptothecin-treated U-937 cells is coupled with a shift from apoptosis to transient G1 arrest followed by necrotic cell death. Canc. Res. 59:3565-3569 (1999)
13. Sweet, S. & Singh, G. Accumulation of human promyelocytic leukemic(HL-60) cells at two energetic cell cycle checkpoints. Canc. Res. 55:5164-5167 (1995)
14. Tsujimoto, Y. Apoptosis and necrosis: intracellular ATP level as a determinant for cell death modes. Cell Death Differ. 4:429-434 (1997)
15. PCT International Search Report for Sloan-Kettering Institute for Cancer Research, et al., Int'l App'l No. PCT/US01/46886, Filed on December 4, 2001, Dated May 22, 2002
16. PCT Written Opinion for Sloan-Kettering Institute for Cancer Research, et al., Int'l App'l No. PCT/US01/46886, Filed on December 4, 2001, Dated April 17, 2003
17. PCT International Preliminary Examination Report for Sloan-Kettering Institute for Cancer Research et al., Int'l App'l No. PCT/US01/46886, Filed December 4, 2001, Dated September 5, 2003.
18. PCT Notification of Transmittal of the International Search Report for Sloan-Kettering Institute for Cancer Research Application No. PCT/US03/18716, Filed on June 13, 2003, Dated November 25, 2003.

Applicants : MARTIN, et al.
U.S. Serial No.: Not Yet Known
Filed : Herewith
Page 4

19. Colofiore, J.R., Stolfi, R.L., Nord, L.D., Martin, D.S., Biochemical modulation of tumor cell energy IV. Evidence for the contribution of ATP depletion to chemotherapeutically-induced tumor regression. *Biochem. Pharmacol.*; 1995, 50(11):1943-1948, 1995.
20. Hageboutros, A., Judes, G.R., Brennan, J., Green, F., Joffman, J., LaCreta, F.P., Colofiore, J., Martin, D.S., Ozols, R.F., O'Dwyer P.J., Phase I trial of fluorouracil modulation by N-phosphonacetyl-L-aspartate and 6-methylmercaptapurine ribonucleoside. *Cancer Chemother. Pharmacol.*; 1996, 37(3):229-234.
21. Kelsen, D., Martin, D.S., Colofiore, J., Sawyer, R., Coit, D., A phase II trial of biochemical modulation using N-phosphonacetyl-L-aspartate, high-dose methotrexate, high-dose 5-fluorouracil, and leucovorin in patients with adenocarcinoma of unknown primary site. *Cancer*; 1992, 70(7): 1988-1992.
22. Kemeny, N., Schneider, A., Martin D.S., Colofiore J, Sawyer, R.C., Derby, S., Salvia, B., Phase I trial of N-phosphonacetyl-L-aspartate, methotrexate, and 5-fluorouracil with leucovorin rescue in patients with advanced cancer. *Cancer Res.*; 1989, 49(16): 4636-4639.
23. Kemeny, N.E., Schneider, A., Martin, D.S., Phase I trial of PALA, methotrexate, fluorouracil, leucovorin, and uridine rescue in patients with advanced cancer. The use of uridine to decrease fluorouracil toxicity. *Cancer Invest.*; 1990, 8(2):263-264.
24. Koutcher, J.A., Alfieri, A.A., Matie, C., Meyer, K.L., Street, J.C., Martin, D.S., Effect of 6-aminonicotinamide

Applicants : MARTIN, et al.
U.S. Serial No.: Not Yet Known
Filed : Herewith
Page 5

on the pentose phosphate pathway: ^{31}P NMR and tumor growth delay studies. *Magn. Reson. Med.*, 1996, 36(6):887-892.

25. Koutcher, J.A., Alfieri, A.A., Tsai, J.C., Matei, C., Stolfi, R.L., Ballon, D., Martin, D.S., Evaluation of chemotherapy and radiation enhancement and ^{31}P NMR spectral changes induced by biochemical modulation. *Cancer Invest.*, 1997, 15(2):111-120.
26. Koutcher, J.A., Alfieri, A.A., Thaler, H., Matei, C., Martin, D.S., Radiation enhancement by biochemical modulation and 5-fluorouracil. *Int. J. Rad. Oncol.*; 1997, 39(5):1145-1152.
27. Mahmood, U., Street, J.C., Matei, C., Ballon, D., Martin, D.S., Koutcher J.A., In vivo detection by ^{31}P NMR of pentose phosphate pathway block secondary to biochemical modulation. *NMR Biomed.*; 1996, 9(3):114-120.
28. Martin DS, Kemeny NE. 1992. Modulation of fluorouracil by N-phosphonacetyl-L-aspartate: a review. *Semin. Oncol.*; 19(2 Suppl 3):49-55.
29. Martin, D.S., Kemeny, N.E., Overview of N-phosphonacetyl-L-aspartate + fluorouracil in clinical trials. *Semin. Oncol.*; 1992, 19(2 Suppl 3):228-233.
30. Martin, D.S., Stolfi, R.L., Colofiore, J.R., Nord, L.D., Sternberg, S., Biochemical modulation of tumor cell energy in vivo: II. A lower dose of Adriamycin is required and a greater antitumor activity is induced when cellular energy is depressed. *Cancer Invest.*; 1994, 12(3):296-307.
31. Martin, D.S., Stolfi, R.L., Colofiore, J.R., Nord, L.D., Marked enhancement in vivo of paclitaxel's (taxol's)

Applicants : MARTIN, et al.
U.S. Serial No.: Not Yet Known
Filed : Herewith
Page 6

tumor-regressing activity by ATP-depleting modulation.
Anticancer Drugs; 1996, 7(6)655-659.

32. Martin, D.S., Schwartz, G.K., Chemotherapeutically induced DNA damage, ATP depletion, and the apoptotic biochemical cascade. *Oncol. Res.*; 1997, 9(1):1-5.
33. Martin, D.S., Spriggs, D., Koutcher, J.A., A concomitant ATP-depleting strategy markedly enhances anticancer agent activity. *Apoptosis*; 2001, 6:125-131, 2001.
34. Martin, D.S. Purine and pyrimidine biochemistry, and some relevant clinical and preclinical cancer chemotherapy research In: G. Powis and R.A. Prough (eds), *Metabolism and Action of Anti-Cancer Drugs*, 91-140. London, Taylor and Francis, 1987.
35. Martin, D.S., Stolfi, R.L., Sawyer, R.C., Spiegelman, S. Casper, E.S. and Young, C.W. Therapeutic utility of utilizing low doses of N-{phosphonacetyl}L-aspartic acid in combination with 5-fluorouracil; a murine study with clinical relevance. *Cancer Res.* 43:2317-2321, 1983.
36. Martin, D.S., Alfieri, A., Koutcher, J.A., et al., Selective-killing of drug-resistant mammary carcinomas by exploiting the tumor cell ATP-viability threshold. *Proc. AACR* 45:570 (Abstract 2462), 2004.
37. Martin, D.S., Stolfi, R.L., Colofiore, J.C., Koutcher, J.A., Alfieri, A., Sternberg, S., and Nord, L.D. Apoptosis resulting from anti-cancer agent activity in vivo is enhanced by biochemical modulation of tumor cell energy. In: M. Lavin and D. Walters (eds.) *Programmed Cell Death. The Cellular and Molecular Biology of Apoptosis* 279-296, New York: Harwood Academic 1993.

Applicants : MARTIN, et al.
U.S. Serial No.: Not Yet Known
Filed : Herewith
Page 7

38. Martin, D.S., Stolfi, R.L., Nord, L.D. and Colofiore, J.R. Enhancement of chemotherapeutically-induced apoptosis in vivo by biochemical modulation of poly-(ADP-ribose) polymerase. *Oncol. Rep.* 3:317-322, 1996.
39. Martin, D.S. Cancer chemotherapy: past is prologue. *Mt. Sinai. J. Med.* 52:426-434, 1985.
40. Martin, D.S., Bertino, J.R., and Koutcher, J.A. ATP depletion. + pyrimidine depletion can markedly enhance cancer therapy. Fresh insight for a new approach. *Cancer Res.* 60:6776-6783, 2000.
41. Koutcher, J.A., Alfieri, A., Stolfi, R.L., Devitt, M.L., Colofiore, J.R., Nord, L.D., and Martin, D.S. Potentiation of three drug chemotherapy regimen by radiation. *Cancer Res.* 53:3518-3823, 1993.
42. Colofiore, J.R., Stolfi, R.L., Nord, L.D., and Martin, D.S. On the relationship of ATP-depletion to chemotherapeutically-induced tumor regression. *Int. J. Oncol.* 7:1401-1404, 1995.
43. Nord, L.D. Stolfi, R.L., Colofiore, J.R., Martin, D.S., Correlation of retetnition of tumore methylmercaptapurine riboside-5'-phosphate with effectiveness in CD8F1 murine mammary tumor regression. *Biochem Pharmacol*; 1996, 51(5):621-627.
44. Nord, L.D., Stolfi, R.L., Alfieri, A.A., Netto, G., Reuter, V., Sternberg, S.S., Colofiore, J.R., Koutcher, J.A., Martin, D.S., Apoptosis induced in advanced CD8F1-murine mammary tumors by the combination of PALA, MMPR and 6AN precedes tumor regression and is preceded by ATP

Applicants : MARTIN, et al.
U.S. Serial No.: Not Yet Known
Filed : Herewith
Page 8

depletion. *Cancer Chemother. Pharmacol.*; 1997, 40:376-384.

45. O'Dwyer, P.J., Judes, G.R., Colofiore, J., Walczak, J., Hoffman, J., LaCreta F.P., Comis, R.L., Martin, D.S., Ozols, R.F., Phase I trial of fluroruracil modulation by of N-phosphonacetyl-L-aspartate and 6-methylmercaptopyrine riboside: optimization of 6-methylmercaptopyrine riboside dose and schedule through biochemical analysis of sequential tumor biopsy specimens. *J. Natl. Cancer Inst.*; 1991, 83(17):1235-1240.
46. Stolfi, R.L., Martin, D.S., Enhancement of anticancer activity by selective inhibition of rapidly proliferating tissues of the host. *Pharmacol. Ther.*; 1991, 49(1-2):43-54.
47. Stolfi, R.L., Colofiore, J.R., Nord, L.D., Koutcher, J.A., Martin, D.S., Biochemical modulation of tumor cell energy: regression of advanced spontaneous murine breast tumors with a 5-fluorouracil-containing drug combination. *Cancer Res.*; 1992, 52(15):4074-4081.
48. Stolfi, R.L., Colofiore, J.R., Nord, L.D., Martin, D.S., Enhanced antitumor activity of an Adriamycin + 5-fluorouracil combination when preceded by biochemical modulation. *Anticancer Drugs*; 1996, 7(1):100-104.
49. Jurkowitz, et al., Adenosine, Inosine, and Guanosine Protect Glial Cells During Glucose Deprivation and Mitochondrial Inhibition: Correlation Between Protection and ATP Preservation. *Journal of Neurochemistry*, 1998, 71(2):535-548. [Exhibit 1]

Applicants : MARTIN, et al.
U.S. Serial No.: Not Yet Known
Filed : Herewith
Page 9

50. Lieberthal, et al., Graded ATP depletion can cause necrosis or apoptosis of cultured mouse proximal tubular cells. *American Physiological Society*; 1998, F315-F327.
[Exhibit 2]
51. Lu, et al., Cellular ATP Depletion by LY309887 as a Predictor of Growth Inhibition in Human Tumor Cell Lines. *Clinical Cancer Research*; January 1, 2000, 5:271-277.
[Exhibit 3]
52. Venkatachalam, et al., Energy Thresholds That Determine Membrane Integrity and Injury in a Renal Epithelial Cell Line (LLC-PK1). *J. Clin. Invest.*; 1988, 81:745-758.
[Exhibit 4]
53. Anundi, et al., Fructose prevents hypoxic cell death in liver. *The American Journal of Physiology*; 1987, Sep;253(3 Pt 1):G390-G396. [Exhibit 5]
54. Cannon, et al., The Effects of Fructose on Adenosine Triphosphate Depletion following Mitochondrial Dysfunction and Lethal Cell Injury in Isolated Rat Hepatocytes. *Toxicology and Applied Pharmacology*; 1991, 108(3):407-416.
[Exhibit 6]
55. Yager, et al., Correlation between Content of High-Energy Phosphates and Phypoxic-Ischemic Damage in Immature and Mature Astrocytes. *Elsevier Science Publishers, Amsterdam*; 1994, 82(1-2):62-68. [Exhibit 7]
56. PCT International Search Report for Sloan-Kettering Institute for Cancer Research, et al., Int'l App'l No. PCT/US03/18716, Filed on June 13, 2003, Dated November 25, 2003. [Exhibit 8]

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57. WO 93/23014 A1 (Martin et al.) Chemotherapeutic Drug
Combinations, Published 25 November 1993 [Exhibit 9]

REMARKS

References 1-14 of the above-identified fifty-seven (57) references were submitted as Information Disclosure Statement to the United States Patent and Trademark Office on December 9, 2002 for U.S. Serial No. 10/172,346, filed June 13, 2002. References 15-16 of the above-identified fifty-seven (57) references were submitted as Supplemental Information Disclosure Statement to the United States Patent and Trademark Office on September 4, 2003 for U.S. Serial No. 10/172,346, filed June 13, 2002. Reference 17 of the above-identified fifty-seven (57) references was submitted as Supplemental Information Disclosure Statement to the United States Patent and Trademark Office on September 19, 2003 for U.S. Serial No. 10/172,346, filed June 13, 2002. Reference 18 of the above-identified fifty-seven (57) references was submitted as Supplemental Information Disclosure Statement to the United States Patent and Trademark Office on December 12, 2003 for U.S. Serial No. 10/172,346, filed June 13, 2002. Also, References 19-48 of the above-identified fifty-seven (57) references were submitted as Supplemental Information Disclosure Statement to the United States Patent and Trademark Office on May 19, 2004 for U.S. Serial No. 10/172,346, filed June 13, 2002. Accordingly, Applicants will not provide these documents unless otherwise requested by the Examiner. References 49-57 of the above-identified fifty-seven (57) references are attached herewith.

If a telephone interview would be of assistance in advancing prosecution of the subject application, Applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

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Respectfully submitted,

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	26	Koutcher, J.A., Alfieri, A.A., Thaler, H., Matei, C., Martin, D.S., Radiation enhancement by biochemical modulation and 5-fluorouracil. Int. J. Rad. Oncol.; 1997, 39(5):1145-1152.	
	27	Mahmood, U., Street, J.C., Matei, C., Ballon, D., Martin, D.S., Koutcher J.A., In vivo detection by 31P NMR of pentose phosphate pathway block secondary to biochemical modulation. NMR Biomed.; 1996, 9(3):114-120.	
	28	Martin DS, Kemeny NE. 1992. Modulation of fluorouracil by N-phosphonacetyl-L-aspartate: a review. Semin. Oncol.; 19(2 Suppl 3):49-55.	
	29	Martin, D.S., Kemeny, N.E., Overview of N-phosphonacetyl-L-aspartate + fluorouracil in clinical trials. Semin. Oncol.; 1992, 19(2 Suppl 3):228-233.	
	30	Martin, D.S., Stolfi, R.L., Colofiore, J.R., Nord, L.D., Sternberg, S., Biochemical modulation of tumor cell energy in vivo: II. A lower dose of Adriamycin is required and a greater antitumor activity is induced when cellular energy is depressed. Cancer Invest.; 1994, 12(3):296-307.	
	31	Martin, D.S., Stolfi, R.L., Colofiore, J.R., Nord, L.D., Marked enhancement in vivo of paclitaxel's (taxol's) tumor-regressing activity by ATP-depleting modulation. Anticancer Drugs; 1996, 7(6):655-659.	
	32	Martin, D.S., Schwartz, G.K., Chemotherapeutically induced DNA damage, ATP depletion, and the apoptotic biochemical cascade. Oncol. Res.; 1997, 9(1):1-5	
	33	Martin, D.S., Spriggs, D., Koutcher, J.A., A concomitant ATP-depleting strategy markedly enhances anticancer agent activity. Apoptosis; 2001, 6:125-131, 2001.	
	34	Martin, D.S. Purine and pyrimidine biochemistry, and some relevant clinical and preclinical cancer chemotherapy research In: G. Powis and R.A. Prough (eds), Metabolism and Action of Anti-Cancer Drugs, 91-140. London, Taylor and Francis, 1987.	

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		Application Number	Not Yet Known
		Filing Date	Herewith
		First Named Inventor	Daniel S. MARTIN
		Art Unit	Not Yet Known
		Examiner Name	Not Yet Known
Sheet	5	of	7
		Attorney Docket Number	636-C-PCT-US

OTHER PRIOR ART—NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	35	Martin, D.S., Stolfi, R.L., Sawyer, R.C., Spiegelman, S. Casper, E.S. and Young, C.W. Therapeutic utility of utilizing low doses of N-(phosphonacetyl)L-aspartic acid in combination with 5-fluorouracil; a murine study with clinical relevance. Cancer Res. 43:2317-2321, 1983.	
	36	Martin, D.S., Alfieri, A., Koutcher, J.A., et al., Selective-killing of drug-resistant mammary carcinomas by exploiting the tumor cell ATP-viability threshold. Proc. AACR 45:570 (Abstract 2462), 2004.	
	37	Martin, D.S., Stolfi, R.L., Colofiore, J.C., Koutcher, J.A., Alfieri, A., Sternberg, S., and Nord, L.D. Apoptosis resulting from anti-cancer agent activity in vivo is enhanced by biochemical modulation of tumor cell energy. In: M. Lavin and D. Walters (eds.) Programmed Cell Death. The Cellular and Molecular Biology of Apoptosis 279-296, New York: Harwood Academic 1993.	
	38	Martin, D.S., Stolfi, R.L., Nord, L.D. and Colofiore, J.R. Enhancement of chemotherapeutically-induced apoptosis in vivo by biochemical modulation of poly-(ADP-ribose) polymerase. Oncol. Rep. 3:317-322, 1996.	
	39	Martin, D.S. Cancer chemotherapy: past is prologue. Mt. Sinai. J. Med. 52:426-434, 1985.	
	40	Martin, D.S., Bertino, J.R., and Koutcher, J.A. ATP depletion. + pyrimidine depletion can markedly enhance cancer therapy. Fresh insight for a new approach. Cancer Res. 60:6776-6783, 2000.	
	41	Koutcher, J.A., Alfieri, A., Stolfi, R.L., Devitt, M.L., Colofiore, J.R., Nord, L.D., and Martin, D.S. Potentiation of three drug chemotherapy regimen by radiation. Cancer Res. 53:3518-3823, 1993.	
	42	Colofiore, J.R., Stolfi, R.L., Nord, L.D., and Martin, D.S. On the relationship of ATP-depletion to chemotherapeutically-induced tumor regression. Int. J. Oncol. 7:1401-1404, 1995.	
	43	Nord, L.D. Stolfi, R.L., Colofiore, J.R., Martin, D.S., Correlation of retetnion of tumore methylmercaptapurine riboside-5'-phosphate with effectiveness in CD8F1 murine mammary tumor regression. Biochem Pharmacol; 1996, 51(5):621-627.	
	44	Nord, L.D., Stolfi, R.L., Alfieri, A.A., Netto, G., Reuter, V., Sternberg, S.S., Colofiore, J.R., Koutcher, J.A., Martin, D.S., Apoptosis induced in advanced CD8F1-murine mammary tumors by the combination of PALA, MMPR and 6AN precedes tumor regression and is preceded by ATP depletion. Cancer Chemother. Pharmacol.; 1997, 40:376-384.	

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7

Application Number

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First Named Inventor

Daniel S. MARTIN

Art Unit

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Examiner Name

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Attorney Docket Number

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OTHER PRIOR ART–NON PATENT LITERATURE DOCUMENTS

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	45	O'Dwyer, P.J., Judes, G.R., Colofiore, J., Walczak, J., Hoffman, J., LaCreta F.P., Comis, R.L., Martin, D.S., Ozols, R.F., Phase I trial of fluorouracil modulation by of N-phosphonacetyl-L-aspartate and 6-methylmercaptopurine riboside: optimization of 6-methylmercaptopurine riboside dose and schedule through biochemical analysis of sequential tumor biopsy specimens. J. Natl. Cancer Inst.; 1991, 83(17):1235-1240.	
	46	Stolfi, R.L., Martin, D.S., Enhancement of anticancer activity by selective inhibition of rapidly proliferating tissues of the host. Pharmacol. Ther.; 1991, 49(1-2):43-54.	
	47	Stolfi, R.L., Colofiore, J.R., Nord, L.D., Koutcher, J.A., Martin, D.S., Biochemical modulation of tumor cell energy: regression of advanced spontaneous murine breast tumors with a 5-fluorouracil-containing drug combination. Cancer Res.; 1992, 52(15):4074-4081.	
	48	Stolfi, R.L., Colofiore, J.R., Nord, L.D., Martin, D.S., Enhanced antitumor activity of an Adriamycin + 5-fluorouracil combination when preceded by biochemical modulation. Anticancer Drugs; 1996, 7(1):100-104.	
	49	Jurkowitz, et al., Adenosine, Inosine, and Guanosine Protect Glial Cells During Glucose Deprivation and Mitochondrial Inhibition: Correlation Between Protection and ATP Preservation. Journal of Neurochemistry, 1998, 71(2):535-548.	
	50	Lieberthal, et al., Graded ATP depletion can cause necrosis or apoptosis of cultured mouse proximal tubular cells. American Physiological Society; 1998, F315-F327.	
	51	Lu, et al., Cellular ATP Depletion by LY309887 as a Predictor of Growth Inhibition in Human Tumor Cell Lines. Clinical Cancer Research; January 1, 2000, 5:271-277.	
	52	Venkatachalam, et al., Energy Thresholds That Determine Membrane Integrity and Injury in a Renal Epithelial Cell Line (LLC-PK1). J. Clin. Invest.; 1988, 81:745-758.	
	53	Anundi, et al., Fructose prevents hypoxic cell death in liver. The American Journal of Physiology; 1987, Sep;253(3 Pt 1):G390-G396.	
	54	Cannon, et al., The Effects of Fructose on Adenosine Triphosphate Depletion following Mitochondrial Dysfunction and Lethal Cell Injury in Isolated Rat Hepatocytes. Toxicology and Applied Pharmacology; 1991, 108(3):407-416.	

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